

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Serge BAUMERT et al.

Conf. 8630

Application No. 10/516,913

Group 3617

Filed June 3, 2005

Examiner Mark T Le

WELDING OF AN ELEMENT OF A TRACK UNIT AND A RAIL SECTION WITHOUT
ADDING ANY MATERIAL

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 4, 2009

Sir:

Applicants request review of the final rejection in
the above-identified application. No amendments are being filed
with this request.

A Notice of Appeal is filed herewith.

The review is requested for the reasons advanced on
the attached sheets.

Respectfully submitted,

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REASONS IN SUPPORT OF REQUEST FOR REVIEW

Claims 1, 2 and 4-14 are pending in the application. Claims 1, 2 and 4-14 have been rejected. Claims 1 and 12 are independent claims.

Claims 1-2, 4-9, and 11-14 were rejected under 35 U.S.C. § 103(a) as being obvious over KAIS (US 6,177,205) in view of BHADESHIA (US 5,879,474). Claim 10 was rejected under 35 U.S.C. § 103(a) as being obvious over KAIS and BHADESHIA and the related art described in the last six lines of page 3 of the specification for the reasons in item 3 on pages 3-4 of the Official Action.

Withdrawal of these rejections as being clearly deficient is respectfully requested.

The present invention pertains to a stretch of rail that is formed from bainitic steel. Typically, claim 1 of the present invention sets forth:

*"A stretch of rail comprising a railway switch element made from high-alloy steel, in which at least one alloy element has a content equal to at least 5% by weight, and a length of rail made from medium-alloy steel, directly connected to one another by a weld without deposition of metal, wherein the length of rail is formed from a medium-alloy low-carbon steel in which the carbon content is less than 0.55% by weight **and which is a bainitic steel.**"*

Independent claim 12 of the present invention sets forth a length of rail that is bainitic. The bainitic rail of

the present invention is illustrated in Figure 2 of the application, which is reproduced below.

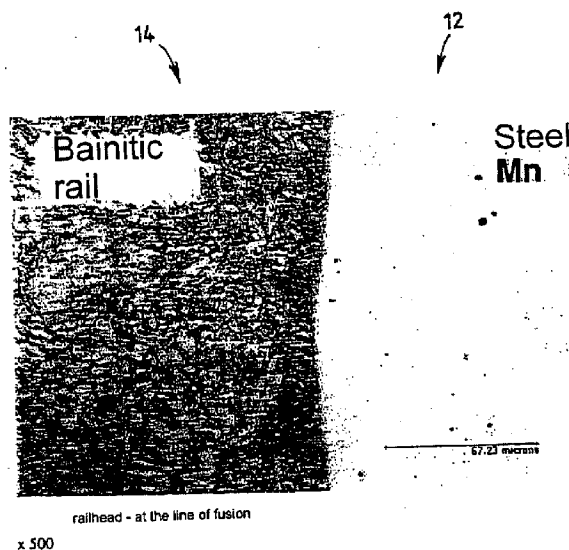
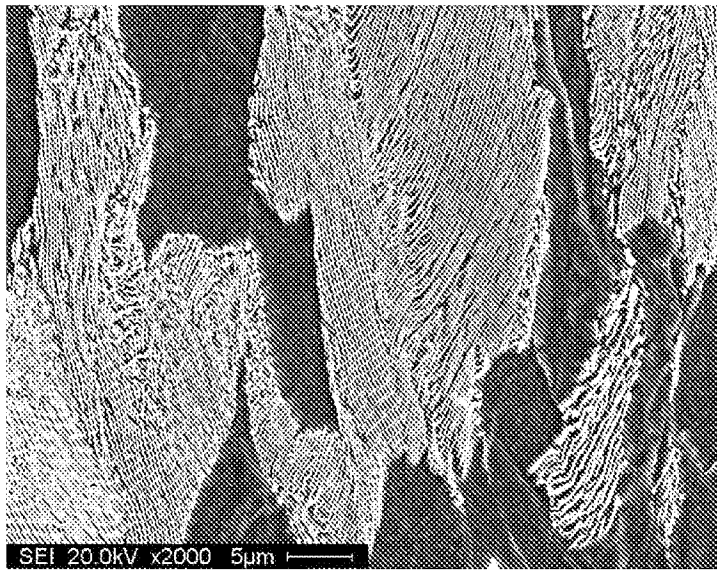


FIG.2

In contrast, KAIS discloses a railroad track composed of: (i) a carbon steel, which is a ***mixed micrographic structure comprising 30-40% bainite and at least 50% pearlite***, and (ii) a high-manganese steel, the latter being joined to the carbon steel by electron-beam welding or indirectly by an intermediate layer comprising a nickel-based alloy. See, col. 1, lines 55-60 and col. 4, lines 22-23 of KAIS. The Official Action of December 4, 2008 does not appear to have taken this important distinction into consideration. That is, the carbon steel in KAIS has a structure of at least 50% pearlite. As a comparison, a pearlite structure is depicted below.



Source: <http://en.wikipedia.org/wiki/File:Pearlite.jpg>

This ***mixed*** steel in KAIS is neither the same nor infers the steel in the length of rail of the present invention, which has ***a micrographic structure being essentially or totally bainitic*** (see claims 1 and 12). Claim 12 recites: "wherein the length of rail made of medium-alloy steel consists essentially of a medium-alloy low-carbon steel in which the carbon content is less than 0.55% by weight and said medium-alloy low-carbon steel is bainitic." Indeed, such claim language excludes the carbon steel in KAIS having a mixed structure of at least 50% pearlite.

Furthermore, rails made of steel having a mixed structure comprising 30-40% bainitic and more than 50% pearlite of KAIS ***cannot have the same properties*** (mechanical and so on) of the claimed rails of the present invention, in which the medium-alloy low-carbon steel is only a bainitic steel. This is evident from the well understood principles that the micrographic structure and properties of steel resulting from heat treatments (during manufacturing process), and they depend

on the chemical composition and the heat treatment (or more generally, the heat history of the steel).

This micrographic structure can be ferrite, pearlite, bainite, martensite or austenite, or a combination of two or more of these structures. The properties of the steel depend from the structure, from the chemical composition, and from heat treatment. The structure can be recognized by micrographic examination under microscope. This is very well known in the art.

Thus, as the structure of the steel rails in claims 1 and 12 is bainitic, these rails are **different** from the rails of KAIS, which are made of a steel whose microstructure (or micrographic structure) comprises at least 50% pearlite. As the microstructures are different, so the properties are different.

BHADESHIA and the related art described in the last six lines of page 3 of the specification do not address the failures of KAIS described above.

That is, the applied art does not have a structure that is essentially or totally bainitic, but instead has a microstructure which is mainly (at least 50%) pearlitic. As a result of this difference, the properties of the steels, specifically the weldability, are not the same.

Therefore, the above-described failures by the Examiner constitute clear error.

Withdrawal of the rejections as being clearly deficient is accordingly respectfully solicited.